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Fifth report on shared natural resources: transboundary aquifers

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I. Introduction

1. The International Law Commission, at its fifty-eighth session in 2006, adopted on first reading 19 draft articles on the law of transboundary aquifers and commentaries thereto and decided to transmit them, through the Secretary-General, to Governments for comments and observations, to be submitted to the Secretary-General by 1 January 2008. The Commission also solicited the views of Governments on the final form of the draft articles.[1]

2. During the debates on the reports of the Commission in the Sixth Committee of the General Assembly in 2006 and 2007, 45 Governments offered oral comments and observations. Twenty-three of them did so in both years. The Secretary-General has received written comments and observations from eight Governments, two of which had not made any previous oral submissions. Accordingly, the Commission now has comments and observations from a total of 47 Governments. The members of the Commission who were newly elected in 2006 also commented on the draft articles.[2] The Special Rapporteur is indeed grateful for all of the comments and observations.

3. In the view of the Special Rapporteur, the comments and observations made by Governments were favourable and supportive, in general, and encouraged the Commission to proceed to the second reading on the basis of the first-reading texts of the draft articles, while certain revisions, additions or deletions in the draft articles and also improvements in the commentaries were suggested. Accordingly, it is the intention of the Special Rapporteur to focus on the proposal of the revised draft articles for the second reading in the present report.

II. Relationship between the work on transboundary aquifers and that on oil and natural gas

4. While awaiting the comments and observations from Governments on the first-reading draft articles and the commentaries thereto, the Commission, at its 2007 session, addressed the question of the relationship between the work on transboundary aquifers and that on oil and natural gas which had been raised often in the Commission, as well as in the Sixth Committee. In his fourth report to the Commission,[3] the Special Rapporteur concluded that, while there were some similarities between non-recharging aquifers and the natural conditions of oil and natural gas, the majority of regulations to be worked out for oil and natural gas would not be directly applicable to aquifers. Accordingly, he recommended that the Commission proceed with and complete the second reading of the law of transboundary aquifers independently from its possible future work on oil and natural gas. His recommendation received a positive reaction in the Commission.[4]

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[1] *Official Records of the General Assembly, Sixty-first Session, Supplement No. 10* (A/61/10), paras. 26, 72 and 73.

[2] See A/CN.4/SR.2930 and SR.2931.

[3] A/CN.4/580.

[4] See *Official Records of the General Assembly, Sixty-second Session, Supplement No. 10* (A/62/10), para. 177.

5. The oral and written comments and observations from Governments also dealt with this aspect. An overwhelming majority of the Governments making such comments and observations supported the suggestion that the law on transboundary aquifers be treated independently of any future work by the Commission on the issues related to oil and natural gas on a number of grounds.[5] These included the following points: the differences between aquifers and oil and natural gas are more significant than the similarities; aquifers provide more than half of humanity's freshwater needs and are a life-supporting resource of mankind; the challenges of managing aquifers, including the environmental impacts and effects, and the commercial considerations are quite different from those related to oil and natural gas; while oil and natural gas are strategically important to economic and social development, they do not constitute "a vital human need"; prospecting, exploration and exploitation of energy resources are a complex endeavour; gathering and assessing State practice on oil and natural gas would take a relatively long time; the draft articles on aquifers would not necessarily apply to oil and natural gas; and, finally, the work on aquifers would be helpful in determining the potential direction, substance and value of any work that might be carried out in the future by the Commission on oil and natural gas. However, one Government did not find the arguments for separation offered by the Commission persuasive.[6] Another suggested that a final decision on adopting separate texts of draft articles be deferred until a later stage.[7] Yet another, which supported the independent work on aquifers on second reading, stressed that it would be difficult to avoid in future the influence of work on a set of draft articles on one category of resources over another and that it was important not to reject a priori any possible links in the development of work in respect of various resources.[8]

6. While supporting the separation of the work on transboundary aquifers from that on oil and natural gas, many Governments expressed their views on the work on oil and natural gas. These views range from support for the initiation of work on oil and natural gas by the Commission on a priority basis to opposition to any such work. The Special Rapporteur does not intend to discuss the issue in the present report as it could be deferred until after the completion of the work on aquifers.

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[5] Nordic countries, A/C.6/62/SR.22, para. 31; India, A/C.6/62/SR.22, para. 38; Argentina, A/C.6/62/SR.22, para. 57; Guatemala, A/C.6/62/SR.22, para. 72; United States of America, A/C.6/62/SR.22, para. 88; Malaysia, A/C.6/62/SR.23, para. 8; Canada, A/C.6/62/SR.23, para. 18; Hungary, A/C.6/62/SR.23, para. 39; Romania, A/C.6/62/SR.24, para. 18; Mexico, A/C.6/62/SR.24, para. 10; Democratic Republic of the Congo, A/C.6/62/SR.24, para. 30; Greece, A/C.6/62/SR.24, para. 41; Cuba, A/C.6/62/SR.24, para. 68; Russian Federation, A/C.6/62/SR.24, para. 81; Japan, A/C.6/62/SR.24, para. 91; Syrian Arab Republic, A/C.6/62/SR.24, para. 93; Portugal, A/C.6/62/SR.24, para. 104; Israel, A/C.6/62/SR.24, para. 109; Brazil, A/C.6/62/SR.24, para. 110; New Zealand, A/C.6/62/SR.25, para. 14; Indonesia, A/C.6/62/SR.25, para. 33; Islamic Republic of Iran, A/C.6/62/SR.25, para. 44; Thailand, A/C.6/62/SR.25, para. 56; Venezuela, A/C.6/62/SR.25, para. 62; Turkey, A/C.6/62/SR.25, para. 65; Poland, A/C.6/62/SR.26, para. 18.

[6] Netherlands, A/C.6/62/SR.24, para. 44, and written comment, para. 3.

[7] Uruguay, A/C.6/62/SR.22, para. 68.

[8] Poland, A/C.6/62/SR.26, paras. 19 and 20.

III. Final form of the draft articles

7. In response to the request by the Commission, many Governments also expressed their views on the final form of the draft articles. The views were divergent. Some Governments favoured a framework convention, which would be of greater benefit than a model convention, a non-binding resolution or simply a report by the Commission.[9] However, some Governments also pointed out that, in the event that a framework convention was preferred, care must be taken not to supersede existing bilateral or regional arrangements or to limit the flexibility of States to enter into such arrangements.[10] Other Governments favoured a non-binding declaration of the General Assembly, setting out general principles that would guide States in framing regional agreements; a set of recommendatory principles representing an authoritative statement of the international standards and best practice which should be followed and be given practical effect at the bilateral and regional levels; or a non-binding instrument in the form of guidelines or a set of model principles.[11] For several of them, the adoption of a convention, particularly if it was not ratified or not wholly supported, could paradoxically reduce the usefulness of the draft articles. Yet other Governments stated that a final decision on the form should not be made in a hurry and should be deferred until after the second reading.[12] Another Government suggested that the adoption of a non-legally binding instrument might merit consideration as a first step in the development of an adequate legal regime for the use of all shared natural resources.[13]

8. While the positions of Governments remain divided, the Special Rapporteur has noticed that some Governments have shifted from supporting a legally binding convention to a non-binding document. The Special Rapporteur believes that the ultimate goal of the Commission should be to aim at a legally binding convention because the law of transboundary aquifers is the follow-up to the 1997 Convention on the Law of the Non-navigational Uses of International Watercourses[14] and the question of aquifers is as important for mankind as that of surface waters, or even more important. However, it would not be realistic to expect that such a goal could be achieved in a reasonably short period in the absence of consensus in the international community. It is also recognized that the codification process of a convention now takes much longer than in the 1950s and 1960s even if there exists consensus. In the face of the global water crisis, urgent action is needed. It would be more practical to cope with the situation if the States concerned were to enter into bilateral or regional arrangements on the basis of the principles stipulated in the draft articles.

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[9] Argentina, A/C.6/62/SR.22, para. 57; Czech Republic, written comment, para. 6, and A/C.6/62/SR.23, para. 57; Hungary, A/C.6/62/SR.23, para. 39; Portugal, A/C.6/62/SR.24, para. 104.

[10] United States of America, A/C.6/62/SR.22, para. 88.

[11] China, A/C.6/62/SR.22, para. 61; Uruguay, A/C.6/62/SR.22, para. 68; United States of America, A/C.6/62/SR.22, para. 88; Canada, A/C.6/62/SR.23, para. 18; Israel, A/C.6/62/SR.24, para. 109; Brazil, A/C.6/62/SR.24, para. 110; New Zealand, A/C.6/62/SR.25, para. 15; Turkey, A/C.6/62/SR.25, para. 65.

[12] Guatemala, A/C.6/62/SR.22, para. 71; Malaysia, A/C.6/62/SR.23, para. 9; Poland, A/C.6/62/SR.26, para. 20.

[13] Netherlands, A/C.6/62/SR.24, para. 48, and written comment, para. 4.

[14] General Assembly resolution 51/229, annex.

9. The Special Rapporteur therefore considers it best for the Commission to follow the two-step approach that was adopted in 2001 for the draft articles on responsibility of States for internationally wrongful acts.[15] Accordingly, the Special Rapporteur proposes that the following draft recommendation to the General Assembly be considered by the Commission:

> The Commission decided, in accordance with article 23 of its Statute, to recommend that the General Assembly should:
>
> (a) Takes note of the draft articles on the law of transboundary aquifers in a resolution and annex the draft articles to the resolution;
>
> (b) Recommend that States make appropriate arrangements bilaterally or regionally with the States concerned for proper management of their transboundary aquifers on the basis of the principles enunciated in the draft articles;
>
> (c) Also consider, at a later stage and in view of the importance of the topic, the possibility of convening a negotiating conference to examine the draft articles with a view to concluding a convention.

IV. Revised draft articles for second reading

10. Taking into account the comments and observations from Governments, the Special Rapporteur proposes the revised draft articles contained in the annex to the present report for second reading by the Commission. In considering the comments and observations made by Governments, the Special Rapporteur placed more weight on those contained in their written and 2007 oral submissions than those expressed in the 2006 oral submissions of the same Governments. The first reading texts of the draft articles were formulated in such a manner as not to prejudge the final form. However, the revised texts are in the form of a convention, because the draft recommendation to the General Assembly in paragraph 9 above foresees the eventual possibility of a convention. The whole texts of the revised draft articles are reproduced in the annex to the present report. Substantial parts of the comments and observations from the Governments relate to the commentaries. Revised texts of the commentaries will be presented to the Commission as soon as the final texts of the draft articles have been adopted by the Commission.

A. Title

11. It was proposed that the title be changed to "Draft law on shared international aquifers".[16] It is recalled that the term "shared" was the subject of intense discussions, as some aquifer States thought that the term might implicate joint ownership of aquifers. The term "international" was also objected as it might suggest internationalization of aquifers. The Commission adopted the term "transboundary" to allay these misgivings, as the term expresses solely physical factors. The use of the term "transboundary" in English is most appropriate and no

[15] *Official Records of the General Assembly, Fifty-sixth Session, Supplement No. 10* (A/56/10 and Corr.1), paras. 72 and 73.

[16] Syrian Arab Republic, A/C.6/62/SR.24, para. 93.

revision of the title is required. However, the Special Rapporteur is aware of some difficulties in translating this term into other languages, in particular, Arabic. Efforts to find an appropriate translation are called for.

B. Article 1 — Scope

12. The proposal was made that the chapeau of this article be amended to read "The goal of the present draft article is to regulate the following:".[17] This proposed version would result in ambiguity. The current chapeau which follows the standard formulation, should be maintained. The view was expressed that the draft articles still did not adequately address the situation of an aquifer or aquifer system that crossed international boundaries but had no hydraulic connection to surface water resources or had a hydraulic connection only to a river or lake located entirely within a single nation.[18] When articles 1 and 2 are read together, it should be clear that the draft articles apply to all aquifers and aquifer systems which are transboundary regardless of whether they are linked to any surface water or not. However, the Special Rapporteur intends to illustrate various cases in the commentaries.

13. Some Governments expressed concern about subparagraph (b). They feared that this formulation was overly broad and could impose unnecessary restrictions on activities in the area of aquifers. Suggestions were made that the Commission should limit the relevant activities to those likely to have "a major impact" or delete the subparagraph altogether if the identification of such activities was not feasible.[19] Subparagraph (b) is viewed as the essential element for the proper management of aquifers by groundwater scientists and administrators. It should not be deleted. However, the Special Rapporteur intends to identify the relevant activities in detail in the commentaries in order to allay the concerns of Governments. Another suggestion was made to include a reference to the activities of non-aquifer States which could have an impact on aquifers.[20] In the view of the Special Rapporteur, the authors of the activities should be clearly specified in the subsequent draft articles dealing with the rights and obligations of States.

14. A proposal was made to add a new subparagraph which reads:

> (d) setting priorities in respect of the utilization of shared groundwaters and aquifer systems.[21]

The Special Rapporteur understands that the intention of the proposer was to have a provision on priority of utilization. It would be difficult to decide priority among the different kinds of utilization a priori. It should be decided in accordance with draft article 5. Another observation was made that the scope seemed to include only freshwater resources and it should be clearly stated that saltwater resources were excluded.[22] It is true that the Special Rapporteur has so far talked exclusively about

[17] Saudi Arabia, written comment.
[18] Indonesia, A/C.6/62/SR.25, para. 34.
[19] China, A/C.6/61/SR.14, para. 6, and Brazil, A/C.6/61/SR.14, para. 85, and A/C.6/62/SR.24, para. 110.
[20] Mexico, A/C.6/61/SR.14, para. 14.
[21] Saudi Arabia, written comment.
[22] Austria, A/C.6/61/SR.13, para. 41.

freshwater resources. However, there are some cases of utilization of brine (salt water) aquifers in very limited instances where salt water is extracted and desalinized and water used for irrigation. This will be explained in the commentary. A suggestion was also made to repeat the adjective "transboundary" before "aquifer system" throughout the draft articles.[23] The Special Rapporteur believes that the intention to apply the adjective "transboundary" to both "aquifer" and "aquifer system" is clear.

C. Article 2 — Use of terms

15. A proposal was made to modify subparagraph (a) to read "'aquifer' means a permeable underground geological formation bearing confined or unconfined water underlain or overlain by a less permeable layer and the water contained in the saturated zone of the formation".[24] The Special Rapporteur recognizes the importance of confined aquifers in the proposer's region which seems to have prompted the proposer to insert the terms "confined" and "overlain". The current definition of aquifer fully covers confined aquifers. It is also pointed out that a geological formation must always be underlain by a less permeable layer in order to qualify as an aquifer. There are many ways to define an aquifer. In the view of the Special Rapporteur, the current formulation is scientifically and technically correct and also legally precise. Still on subparagraph (a), the Special Rapporteur proposes to delete the word "underground" before a "geological formation" because a "geological formation" by its nature exists only in the underground even if some part of it might be exposed to the surface of the Earth.

16. On subparagraph (d), one Government observed that it is understood that aquifers, especially in the form of confined groundwater, may also be found in areas under the jurisdiction or control of States outside their territories and that when the Commission considers the application of the draft articles to all shared natural resources during the second reading of the draft articles, it will become inevitable to revisit the definition of "aquifer State" and to address the application of the draft articles to shared natural resources that can be found under the continental shelves of States, notably oil and gas.[25] In the view of the Special Rapporteur, extending the scope of application to continental shelves would bring in complications and he is opposed to this suggestion. If a transboundary aquifer between State A and State B extends to the continental shelves of both States or of either State A or State B, then both States qualify as an aquifer State under the current definition of an aquifer State. If a domestic aquifer of State A extends to the continental shelf of State A and at the same time to that of State B or if an aquifer is located only within the continental shelves of both States, neither State qualifies as an aquifer State. Should the draft articles cover the aquifer in the latter case? First of all, aquifers are mostly located under land territories. Extension of such aquifers beyond the territorial seas is possible but rather rare. Rock reservoirs found exclusively on continental shelves usually hold oil and natural gas and in some cases brine. Therefore, if the Commission were to extend the scope of application to continental shelves, it would

[23] Netherlands, written comment, para. 6.
[24] Saudi Arabia, written comment.
[25] Netherlands, written comment, para. 6.

in fact be linking the work on transboundary aquifers with that on oil and natural gas.

17. The Special Rapporteur wishes to propose the following new subparagraph on the definition of the term "utilization", which appears often throughout the draft articles:

> (d *bis*) "utilization of transboundary aquifers or aquifer systems" includes withdrawal of water, heat and minerals, storage and disposal;

This new subparagraph lists only the most known and current uses and is not exhaustive. For storage and disposal, there is, for instance, a new technique to utilize an aquifer for carbon sequestration in the treatment of wastes. It leaves the responsibility to determine what constitutes acceptable "storage" and "disposal" to the aquifer States concerned. It is understood that regulations are in force in many States prohibiting the injection of toxic, radioactive or other hazardous wastes. The commentaries should elaborate on these aspects.

18. On subparagraphs (f) and (g), one Government proposed the addition of the expression "that part of" before "the catchment area" in subparagraph (f) and the addition of "or the upward flow system keeps the groundwater table permanently close to the surface" at the end of subparagraph (g).[26] The Special Rapporteur understands that the intention of the proposals was to clarify that the recharge zone is where infiltration through the soil is significant and/or where surface water contributed directly to aquifers and that the discharge zone could exist without any water being present on the surface. These are rather detailed technical clarifications and could be properly explained in the commentaries.

19. Similar terms such as "an impact", "environmental impact", "significant harm", "serious harm", "to affect", "significant adverse effect", and "detrimental effect" are used in various draft articles. These terms are carefully selected and should be construed in the context of the draft articles in which they are used. Their precise meaning will be elaborated in the commentaries.

D. Article 3 — Sovereignty of aquifer States

20. Some Governments sought to strengthen the sovereignty aspects by a direct reference to General Assembly resolution 1803 (XVII), by a new formulation ("Each aquifer State shall exercise its inherent sovereignty over the portion of a transboundary aquifer or aquifer system located within its territory for the purposes provided in article 1 in accordance with the present draft articles") or by deleting the last sentence of the article.[27] Others stated that sovereignty was also governed by the rules and generally accepted principles of international law and emphasized the principle of cooperation between States and the principle of mitigation in this connection.[28] The Special Rapporteur believes that the current formulation reflects the appropriate balance between these differing positions.

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[26] Hungary, A/C.6/61/SR.14, para. 12.

[27] Brazil, A/C.6/62/SR.24, para. 110; Venezuela, A/C.6/62/SR.25, para. 63; Cuba, A/C.6/62/SR.24, para. 65; Turkey, written comment, para. 2; China, A/C.6/61/SR.14, para. 5.

[28] Portugal, written comment, para. 9, and A/C.6/61/SR.14, para. 69; Russian Federation, A/C.6/61/SR.18, para. 69.

E. Article 4 — Equitable and reasonable utilization

21. Some Governments emphasized the concept of sustainability, proposing to substitute "equitable and sustainable utilization" for "equitable and reasonable utilization".[29] It is not appropriate to apply the concept of sustainability to aquifers because the waters in non-recharging aquifers are not renewable resources and even the waters in recharging aquifers receive only a fraction of recharge in comparison with the total amount of water stored in such aquifers. On subparagraph (c), the proposal was made to change the expression "present and future needs" to "the needs of present and future generations".[30] This change might make the timespan unduly long. Also on subparagraph (c), the proposal was made to delete the expression "alternative water resources" because neither groundwater resources nor surface water resources could be treated as alternatives to one another and they are already a part of the utilization plan.[31] The Special Rapporteur understands that this argument is correct when a State establishes the overall utilization plan for the whole of its water resources. However, it should be pointed out that the utilization plan in subparagraph (c) is the one which relates only to a transboundary aquifer, excluding domestic aquifers and international rivers and other water resources which are not linked to that transboundary aquifer. Accordingly, the need to take into account alternative water resources arises in establishing such a plan. There was a suggestion for a new subparagraph (e) which would read "no State may assign, lease or sell, in whole or in part, to any other State, whether an aquifer State or a non-aquifer State, its right to utilize aquifers".[32] The Special Rapporteur feels that this must be left to States to decide.

F. Article 5 — Factors relevant to equitable and reasonable utilization

22. Suggestions were made to change subparagraph 1 (c) to read "the compatibility of a given mode of utilization with the natural characteristics of the aquifer or aquifer system within each State" and to have a new subparagraph which takes into consideration the area, extent, thickness and characteristics of the aquifer and the direction in which groundwaters flow.[33] The proposed new version of subparagraph 1 (c) relates more to the question of priority among the different kinds of utilization and is not what the current subparagraph (c) aims at but is more relevant to paragraph 2. Such priority could not be given to a particular kind of utilization a priori. The latter proposal could be elaborated in the commentaries to subparagraph 1 (c). A suggestion was made to delete subparagraph 1 (g) on the same rationale as the one underpinning the suggestion to delete "alternative water resources" from subparagraph (c) of article 4.[34] The observation made by the Special Rapporteur regarding that suggestion in paragraph 21 above also applies here. There was also a suggestion to add another factor — any existing and planned

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[29] Cuba, A/C.6/62/SR.24, para. 64; Syrian Arab Republic, A/C.6/62/SR.24, para. 95; Mexico, A/C.6/61/SR.14, para. 35.

[30] Cuba, A/C.6/62/SR.24, para. 66.

[31] Turkey, written comment, para. 3.

[32] Saudi Arabia, written comment.

[33] Saudi Arabia, written comment.

[34] Turkey, written comment, para. 4.

other activities and their effects — in view of the fact that the draft articles would cover activities other than the utilization of aquifers.[35] Other activities are regulated in draft articles 6, 10 and 14. The Special Rapporteur finds it rather difficult to see the direct relevance of such activities in determining equitable and reasonable utilization of aquifers. However, if they have relevance, subparagraph 1 (b) may cover the case. Textual modifications were suggested to clarify subparagraph 1 (d) and "vital human needs" in paragraph 2.[36] The Special Rapporteur feels that they would be better clarified in the commentaries.

G. Article 6 — Obligation not to cause significant harm to other aquifer States

23. Some Governments repeated their objections to the high threshold of "significant" harm. Others stated that the scope of the obligation, "significant harm", "impact", "appropriate measures" and the authority which should decide the measures to be taken must be clarified.[37] These should be elaborated in the commentaries. Another Government proposed the following alternative text for article 6:[38]

> 1. Aquifer States shall, in utilizing a transboundary aquifer or aquifer system in their territories, pay due diligence to prevent the causing of significant harm to other aquifer States.
>
> 2. Aquifer States shall, in undertaking activities other than utilization of a transboundary aquifer or aquifer system that have, or are likely to have, an impact on that transboundary aquifer or aquifer system, refrain from causing significant harm through that aquifer or aquifer system to other aquifer States.
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> 3. Where significant harm nevertheless is caused to another aquifer State, the aquifer States whose activities cause such harm shall try, in consultation with the affected State, to eliminate or mitigate such harm, having due regard for the provisions of draft articles 4 and 5.

The Special Rapporteur feels that this new text would weaken the obligations to be prescribed in this article.

24. One Government suggested that the subject of paragraph 2 of draft article 6 should be all States rather than aquifer States.[39] The Special Rapporteur considers that the case in which a non-aquifer State may cause harm to aquifer States through a transboundary aquifer would be limited to the case where a recharge or discharge zone is located in such a non-aquifer State. That case is already governed by draft article 10.

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[35] Netherlands, written comment, para. 7.

[36] Greece, A/C.6/61/SR.15, para. 34, and Malaysia, A/C.6/61/SR.15, para. 48.

[37] Portugal, written comment, para. 10; Nordic countries, A/C.6/62/SR.22, para. 31; Uruguay, A/C.6/61/SR.14, para. 80; Greece, A/C.6/61/SR.15, para. 35; Romania, A/C.6/61/SR.19, para. 59.

[38] Turkey, written comment, para. 5.

[39] Netherlands, written comment, para. 9.

25. Some Governments regretted the omission of a provision on compensation from paragraph 3 of draft article 6.[40] One Government wished to have an explicit provision on irreversible harm, the compensatory obligation of the State causing the harm, the method of compensation and the designation of the competent authority for it.[41] Since the views of Governments are divided on this issue, the Special Rapporteur intends to elaborate the legal framework relevant to the issue in the commentaries.

H. Article 7 — General obligation to cooperate

26. One Government suggested the deletion of "good faith" from paragraph 1 as the term "good faith" raises fears that States may, in good faith, take measures that were not negotiated with the other party and that could have adverse effects on the needs of the other party.[42] "Good faith" is incorporated here not as an element of excuse for evading the obligation of cooperation and it is found in an equivalent article 8 (1) of the 1997 Watercourses Convention. On paragraph 2 of draft article 7, there were opposing suggestions to replace "should" by "shall" and to change the paragraph to read "aquifer States should give positive consideration to establishing joint mechanism of cooperation".[43] The Special Rapporteur's suggestion is to keep the text as it is.

I. Article 8 — Regular exchange of data and information

27. There were no comments or observations which called for modification of this draft article.

J. Article 9 — Protection and preservation of ecosystems

28. There was a suggestion to broaden the scope of this draft article from aquifer States to all States.[44] This article is intended to protect ecosystems not only within aquifers but also ecosystems located outside aquifers. The Special Rapporteur intends to submit the clarification on the scope of the latter ecosystems so that the decision could be made whether non-aquifer States should be required to protect such ecosystems. Another suggestion was to add at the end of the article "whilst giving special regard to basic human needs".[45] The Special Rapporteur feels that the derogation from the obligations in this article should be governed by the general rules of international law, namely circumstances precluding wrongfulness, which in a particular case might include the basic human water need.

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[40] Netherlands, written comment, para. 8; Hungary, A/C.6/61/SR.14, para. 10; Cuba, A/C.6/61/SR.16, para. 11.

[41] Saudi Arabia, written comment.

[42] Czech Republic, written comment, para. 3.

[43] Czech Republic, written comment, para. 4, and China, A/C.6/61/SR.14, para. 6.

[44] Netherlands, written comment, para. 10.

[45] Turkey, written comment, para. 6.

K. Article 10 — Recharge and discharge zones

29. There were no comments or observations which called for modification of this draft article.

L. Article 11 — Prevention, reduction and control of pollution

30. The comment that the threshold of "significant harm" was too high (see para. 23 above) was repeated here.[46] One Government suggested that there must be a reference to the procedures which States should adopt in the event of problems of the quality of water and proposed to insert "adopt all the measures to" before "prevent, reduce and ...".[47] The Special Rapporteur feels that the current formulation is clearer in prescribing the obligation to prevent, reduce and control pollution and that the procedural measures would be more appropriately explained in the commentaries. Another Government suggested broadening the scope of this draft article from aquifer States to all States.[48] The Special Rapporteur wonders whether non-aquifer States, in whose territory there exists neither a recharge nor a discharge zone of a transboundary aquifer of other States, have any role to play in preventing, reducing or controlling pollution of that aquifer.

31. Regarding the second sentence of this draft article, suggestions were made to replace "precautionary approach" by "precautionary principle"[49] and to broaden the application of "precautionary principle" to utilization by revising the text to read "aquifer States shall apply the precautionary principle to the utilization of transboundary aquifers and transboundary aquifer systems".[50] The Special Rapporteur intends to cite instances where "precautionary approach" and "precautionary principle" are used in various conventions and to define what is meant by the terms. The Special Rapporteur considers that the utilization of aquifers per se is not hazardous and should not necessarily involve resort to a precautionary approach.

32. In order to put more focus on "precautionary approach", the Special Rapporteur proposes to alter the word order of the second sentence of this article to read:

> Aquifer States shall take a precautionary approach in view of uncertainty about the nature and extent of transboundary aquifers or aquifer systems ...

M. Article 12 — Monitoring

33. There was a proposal to modify the first two sentences to read: "Aquifer States shall monitor their transboundary aquifer or aquifer system. They shall carry out these monitoring activities, where appropriate, jointly with other aquifer States concerned and in collaboration with the competent international organizations".[51]

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[46] Nordic countries, A/C.6/62/SR.22, para. 31.
[47] Portugal, written comment, para. 7.
[48] Netherlands, written comment, para. 11.
[49] Nordic countries, A/C.6/62/SR.22, para. 31.
[50] Netherlands, written comment, para. 12.
[51] Turkey, written comment, para. 7.

The Special Rapporteur does not see a rationale behind this proposal. There was another suggestion for an additional clause indicating that the aquifer States, following consultation among themselves, would formulate the objectives of monitoring, on the basis of which the monitoring system and parameters to be monitored would be decided.[52] The Special Rapporteur feels that this could be elaborated in the commentaries.

N. Article 13 — Management

34. There were no comments or observations which called for modification of this draft article.

O. Article 14 — Planned activities

35. A suggestion was made to align paragraph 2 with paragraph 1 by making an explicit reference to "environmental effects" in the first paragraph.[53] It was pointed out that the assessment which is required in the first paragraph is limited to the possible effects upon another State and could be narrower than an environmental impact assessment. The notification to be provided in accordance with the second paragraph must be accompanied by such an assessment as well as an environmental impact assessment if the latter is also available. The same Government proposed to provide for the obligation to refrain from implementing planned activities during the consultation and negotiations between the States concerned.[54] It is recalled that the general preference was to have simpler procedural requirements than those set out in the 1997 Watercourses Convention. The introduction of a time period for refraining from implementation of planned activities would not be fair unless it were accompanied by the time limits of other actions and omissions, such as reply to notification, consultation and negotiations, and also by other procedural requirements. Related also to this aspect, another Government proposed the addition of the phrase: "Should no agreement be reached within a reasonable time period, the notifying State could exercise its sovereign right to implement its planned activity with best efforts to reduce its adverse effects".[55] Still related to this aspect, the views were expressed that the provision would allow affected States to veto planned activities in other States; that the affected States should have the right to consult with the States of planned activities even if they were not notified of the plans; and that a legal regime for activities covered here could only be established with the consent of the State of planned activities.[56] The Special Rapporteur is of the view that in the absence of established rules in this respect vis-à-vis aquifers, these procedural requirements must be left to the best judgment of the States concerned. The definition of "significant adverse effect" sought by some Governments[57] will be discussed in the commentaries.

[52] Thailand, A/C.6/62/SR.25, para. 55.
[53] Netherlands, written comment, para. 13.
[54] Netherlands, written comment, para. 14.
[55] Turkey, written comment, para. 8.
[56] Ethiopia, A/C.6/61/SR.14, para. 90; Jordan, A/C.6/61/SR.15, para. 14; and Russian Federation, A/C.6/61/SR.18, para. 69.
[57] Portugal, written comment, para. 10.

P. Article 15 — Scientific and technical cooperation with developing States

36. A suggestion was made to replace "shall" by "could" in the second sentence of the chapeau of this article as "shall" implies obligation.[58] The sentence in question provides a non-exhaustive list of various kinds of cooperation. It could be modified to read: "Such cooperation includes, inter alia ...".

Q. Articles 16 (Emergency situations), 17 (Protection in time of armed conflict), 18 (Data and information concerning national defence or security) and 19 (Bilateral and regional agreements and arrangements)

37. There were no comments or observations which called for modification of these four draft articles.

R. Additional articles

38. If the draft articles are eventually to become a convention as foreseen in the draft recommendation to the General Assembly in paragraph 9 above, they should include an article on the relationship with other agreements. The Special Rapporteur proposes the following draft article on the relation to other conventions for the consideration by the Commission:

Article 20

Relation to other conventions and international agreements

1. The present draft articles shall not alter the rights and obligations of the States parties which arise from other conventions and international agreements compatible with the present draft articles and which do not affect the enjoyment by other States parties of their rights or the performance of their obligations under the present draft articles.

2. Notwithstanding the provisions of paragraph 1, when the States parties to the present draft articles are parties also to the Convention on the Law of the Non-navigational Uses of International Watercourses, the provisions of the latter concerning transboundary aquifers or aquifer systems apply only to the extent that they are compatible with those of the present draft articles.

39. Paragraph 1 is intended to define the relationship between the present draft articles and other conventions and international agreements that regulate transboundary aquifers as well as those that regulate mainly matters other than transboundary aquifers but have some limited application to transboundary aquifers. An example of the latter case is the Convention on the Protection and Use of Transboundary Watercourses and International Lakes, concluded under the auspices of the Economic Commission for Europe. Another example is article 194 of the United Nations Convention on the Law of the Sea (Measures to prevent, reduce and control pollution of the marine environment) and, in particular, its paragraph 3 (a),

[58] Turkey, written comment, para. 9.

concerning pollution from land-based sources. Many environmental agreements may also be relevant. If the provisions of the present draft articles and those of other conventions and international agreements are compatible, there would be no problem in parallel application. If, however, there exists conflict, it would not be appropriate to stipulate a general rule of priority. A decision on such priority would be possible only after the contents of the relevant provisions are fully examined. Accordingly, the Special Rapporteur formulated this draft article on the basis of article 311, paragraph 2 of the United Nations Convention on the Law of the Sea. Bilateral and regional agreements regulated by draft article 12 are also covered by this paragraph. Many Governments stated that the draft articles should not affect the existing agreements. The Special Rapporteur intends to state in the commentaries that the State parties to those agreements should consider harmonizing such agreements with the basic principles of the present draft articles and where those parties consider that adjustment in application of the provisions of the present draft articles is required because of the special characteristics and utilization of a particular transboundary aquifer or aquifer system, they should consult among themselves with a view to negotiating in good faith for the purpose of concluding an agreement beneficial to all the parties.

40. Paragraph 2 relates to transboundary aquifers and aquifer systems that are hydraulically linked to international watercourses which are subject to the scope of both the present draft articles and the Convention on the Law of Non-navigational Uses of International Watercourses. The present draft articles focus exclusively on aquifers while the convention focuses on surface waters; its relevance to aquifers is peripheral. Should a conflict arise, the present draft articles should prevail as they are formulated to govern exclusively transboundary aquifers and are the follow-up to the convention.

41. It was suggested to include a dispute-settlement mechanism if the text should take the form of a convention.[59] The Special Rapporteur suggests to leave the matter of dispute settlement to the negotiating conference. While the setting up of a mechanism to settle disputes concerning aquifers is of utmost importance, the disputes which are likely to arise in real life would mainly relate to the interpretation and application of the provisions of a bilateral or regional agreement concerning a specific aquifer. The provision on the settlement of disputes for the draft articles could be a rather brief statement of principles. The preamble and final clauses are also left to the negotiating conference.

V. Acknowledgements

42. In addition to the valuable assistance and support from the Codification Division of the Office of Legal Affairs, the Special Rapporteur continues to receive scientific and technical advice from the United Nations Educational, Scientific and Cultural Organization (UNESCO), in particular the group of experts it sent to Tokyo in January 2008;[60] legal and administrative assistance from the Ministry of Foreign

[59] Republic of Korea, written comment.

[60] Alice Aureli and Raya Stephan of UNESCO, Gabriel Eckstein of the Texas Tech University School of Law, Shammy Puri of the International Association of Hydrogeologists, Lloyd Woosley of the United States Geological Survey and Stefano Burchi of the Food and Agriculture Organization of the United Nations.

Affairs of Japan; and support from the academic members and legal experts of the study group established by the Ministry on the topic of shared natural resources.[61] UNESCO invited the Special Rapporteur to two of its regional seminars, one for European States in Paris in May 2007 and the other, cosponsored with the Government of Canada, for American States in Montreal in September 2007, where the Special Rapporteur had the privilege to meet with experts from the regions and to take part in a field trip to observe the management of transboundary aquifers. The Special Rapporteur wishes to takes this opportunity to express his sincere gratitude for their most valuable contributions.

[61] Kazuhiro Nakatani of the University of Tokyo, Mariko Kawano of Waseda University, Itsuko Nakai of Konan University, Mari Koyano of Hokkaido University, Hiroyuki Banzai of Surugadai University, Tadashi Mori of Metropolitan University Tokyo, Yasuhiro Shigeta of the University of Kyoto, Jun Tsuruta of the Maritime Safety Academy, Naoki Iwatsuki of Rikkyo University and Junko Iwaishi of Sophia University.

Annex

The law of transboundary aquifers

PART I

INTRODUCTION

Article 1

Scope

The present draft articles apply to:

(a) utilization of transboundary aquifers and aquifer systems;

(b) other activities that have or are likely to have an impact upon those aquifers and aquifer systems; and

(c) measures for the protection, preservation and management of those aquifers and aquifer systems.

Article 2

Use of terms

For the purposes of the present draft articles:

(a) "aquifer" means a permeable water-bearing geological formation underlain by a less permeable layer and the water contained in the saturated zone of the formation;

(b) "aquifer system" means a series of two or more aquifers that are hydraulically connected;

(c) "transboundary aquifer" or "transboundary aquifer system" means respectively, an aquifer or aquifer system, parts of which are situated in different States;

(d) "aquifer State" means a State in whose territory any part of a transboundary aquifer or aquifer system is situated;

(d *bis*) "utilization of transboundary aquifers and aquifer systems" includes withdrawal of water, heat and minerals, storage and disposal;

(e) "recharging aquifer" means an aquifer that receives a non-negligible amount of contemporary water recharge;

(f) "recharge zone" means the zone which contributes water to an aquifer, consisting of the catchment area of rainfall water and the area where such water flows to an aquifer by runoff on the ground and infiltration through soil;

(g) "discharge zone" means the zone where water originating from an aquifer flows to its outlets, such as a watercourse, a lake, an oasis, a wetland or an ocean.

PART II

GENERAL PRINCIPLES

Article 3

Sovereignty of aquifer States

Each aquifer State has sovereignty over the portion of a transboundary aquifer or aquifer system located within its territory. It shall exercise its sovereignty in accordance with the present draft articles.

Article 4

Equitable and reasonable utilization

Aquifer States shall utilize a transboundary aquifer or aquifer system according to the principle of equitable and reasonable utilization, as follows:

(a) they shall utilize the transboundary aquifer or aquifer system in a manner that is consistent with the equitable and reasonable accrual of benefits therefrom to the aquifer States concerned;

(b) they shall aim at maximizing the long-term benefits derived from the use of water contained therein;

(c) they shall establish individually or jointly an overall utilization plan, taking into account present and future needs of, and alternative water sources for, the aquifer States; and

(d) they shall not utilize a recharging transboundary aquifer or aquifer system at a level that would prevent continuance of its effective functioning.

Article 5

Factors relevant to equitable and reasonable utilization

1. Utilization of a transboundary aquifer or aquifer system in an equitable and reasonable manner within the meaning of draft article 4 requires taking into account all relevant factors, including:

(a) the population dependent on the aquifer or aquifer system in each aquifer State;

(b) the social, economic and other needs, present and future, of the aquifer States concerned;

(c) the natural characteristics of the aquifer or aquifer system;

(d) the contribution to the formation and recharge of the aquifer or aquifer system;

(e) the existing and potential utilization of the aquifer or aquifer system;

(f) the effects of the utilization of the aquifer or aquifer system in one aquifer State on other aquifer States concerned;

(g) the availability of alternatives to a particular existing and planned utilization of the aquifer or aquifer system;

(h) the development, protection and conservation of the aquifer or aquifer system and the costs of measures to be taken to that effect;

(i) the role of the aquifer or aquifer system in the related ecosystem.

2. The weight to be given to each factor is to be determined by its importance with regard to a specific transboundary aquifer or aquifer system in comparison with that of other relevant factors. In determining what is equitable and reasonable utilization, all relevant factors are to be considered together and a conclusion reached on the basis of all the factors. However, in weighing different utilizations of a transboundary aquifer or aquifer system, special regard shall be given to vital human needs.

Article 6

Obligation not to cause significant harm to other aquifer States

1. Aquifer States shall, in utilizing a transboundary aquifer or aquifer system in their territories, take all appropriate measures to prevent the causing of significant harm to other aquifer States.

2. Aquifer States shall, in undertaking activities other than utilization of a transboundary aquifer or aquifer system that have, or are likely to have, an impact on that transboundary aquifer or aquifer system, take all appropriate measures to prevent the causing of significant harm through that aquifer or aquifer system to other aquifer States.

3. Where significant harm nevertheless is caused to another aquifer State, the aquifer States whose activities cause such harm shall take, in consultation with the affected State, all appropriate measures to eliminate or mitigate such harm, having due regard for the provisions of draft articles 4 and 5.

Article 7

General obligation to cooperate

1. Aquifer States shall cooperate on the basis of sovereign equality, territorial integrity, sustainable development, mutual benefit and good faith in order to attain equitable and reasonable utilization and appropriate protection of their transboundary aquifer or aquifer system.

2. For the purpose of paragraph 1, aquifer States should establish joint mechanisms of cooperation.

Article 8

Regular exchange of data and information

1. Pursuant to draft article 7, aquifer States shall, on a regular basis, exchange readily available data and information on the condition of the transboundary aquifer or aquifer system, in particular of a geological, hydrogeological, hydrological, meteorological and ecological nature and related to the hydrochemistry of the aquifer or aquifer system, as well as related forecasts.

2. Where knowledge about the nature and extent of some transboundary aquifer or aquifer systems is inadequate, aquifer States concerned shall employ their best efforts to collect and generate more complete data and information relating to such aquifer or aquifer systems, taking into account current practices and standards. They shall take such action individually or jointly and, where appropriate, together with or through international organizations.

3. If an aquifer State is requested by another aquifer State to provide data and information relating to the aquifer or aquifer systems that are not readily available, it shall employ its best efforts to comply with the request. The requested State may condition its compliance upon payment by the requesting State of the reasonable costs of collecting and, where appropriate, processing such data or information.

4. Aquifer States shall, where appropriate, employ their best efforts to collect and process data and information in a manner that facilitates their utilization by the other aquifer States to which such data and information are communicated.

PART III

PROTECTION, PRESERVATION AND MANAGEMENT

Article 9

Protection and preservation of ecosystems

Aquifer States shall take all appropriate measures to protect and preserve ecosystems within, or dependent upon, their transboundary aquifers or aquifer systems, including measures to ensure that the quality and quantity of water retained in the aquifer or aquifer system, as well as that released in its discharge zones, are sufficient to protect and preserve such ecosystems.

Article 10

Recharge and discharge zones

1. Aquifer States shall identify recharge and discharge zones of their transboundary aquifer or aquifer system and, within these zones, shall take special measures to minimize detrimental impacts on the recharge and discharge processes.

2. All States in whose territory a recharge or discharge zone is located, in whole or in part, and which are not aquifer States with regard to that aquifer or aquifer

system, shall cooperate with the aquifer States to protect the aquifer or aquifer system.

Article 11

Prevention, reduction and control of pollution

Aquifer States shall, individually and, where appropriate, jointly, prevent, reduce and control pollution of their transboundary aquifer or aquifer system, including through the recharge process, that may cause significant harm to other aquifer States. Aquifer States shall take a precautionary approach in view of uncertainty about the nature and extent of transboundary aquifers or aquifer systems and of their vulnerability to pollution.

Article 12

Monitoring

1. Aquifer States shall monitor their transboundary aquifer or aquifer system. They shall, wherever possible, carry out these monitoring activities jointly with other aquifer States concerned and, where appropriate, in collaboration with the competent international organizations. Where, however, monitoring activities are not carried out jointly, the aquifer States shall exchange the monitored data among themselves.

2. Aquifer States shall use agreed or harmonized standards and methodology for monitoring their transboundary aquifer or aquifer system. They should identify key parameters that they will monitor based on an agreed conceptual model of the aquifer or aquifer system. These parameters should include parameters on the condition of the aquifer or aquifer system as listed in draft article 8, paragraph 1, and also on the utilization of the aquifer and aquifer system.

Article 13

Management

Aquifer States shall establish and implement plans for the proper management of their transboundary aquifer or aquifer system in accordance with the provisions of the present draft articles. They shall, at the request by any of them, enter into consultations concerning the management of the transboundary aquifer or aquifer system. A joint management mechanism shall be established, wherever appropriate.

PART IV

ACTIVITIES AFFECTING OTHER STATES

Article 14

Planned activities

1. When a State has reasonable grounds for believing that a particular planned activity in its territory may affect a transboundary aquifer or aquifer system and thereby may have a significant adverse effect upon another State, it shall, as far as practicable, assess the possible effects of such activity.

2. Before a State implements or permits the implementation of planned activities which may affect a transboundary aquifer or aquifer system and thereby may have a significant adverse effect upon another State, it shall provide that State with timely notification thereof. Such notification shall be accompanied by available technical data and information, including any environmental impact assessment, in order to enable the notified State to evaluate the possible effects of the planned activities.

3. If the notifying and the notified States disagree on the possible effect of the planned activities, they shall enter into consultations and, if necessary, negotiations with a view to arriving at an equitable resolution of the situation. They may utilize an independent fact-finding body to make an impartial assessment of the effect of the planned activities.

PART V

MISCELLANEOUS PROVISIONS

Article 15

Scientific and technical cooperation with developing States

States shall, directly or through competent international organizations, promote scientific, educational, technical and other cooperation with developing States for the protection and management of transboundary aquifers or aquifer systems. Such cooperation shall include, inter alia:

(a) Training of their scientific and technical personnel;

(b) Facilitating their participation in relevant international programmes;

(c) Supplying them with necessary equipment and facilities;

(d) Enhancing their capacity to manufacture such equipment;

(e) Providing advice on and developing facilities for research, monitoring, educational and other programmes;

(f) Providing advice on and developing facilities for minimizing the detrimental effects of major activities affecting transboundary aquifers or aquifer systems;

(g) Preparing environmental impact assessments.

Article 16

Emergency situations

1. For the purpose of the present draft article, "emergency" means a situation, resulting suddenly from natural causes or from human conduct, that poses an imminent threat of causing serious harm to aquifer States or other States.

2. Where an emergency affects a transboundary aquifer or aquifer system and thereby poses an imminent threat to States, the following shall apply:

(a) The State within whose territory the emergency originates shall:

(i) without delay and by the most expeditious means available, notify other potentially affected States and competent international organizations of the emergency;

(ii) in cooperation with potentially affected States and, where appropriate, competent international organizations, immediately take all practicable measures necessitated by the circumstances to prevent, mitigate and eliminate any harmful effect of the emergency;

(b) States shall provide scientific, technical, logistical and other cooperation to other States experiencing an emergency. Cooperation may include coordination of international emergency actions and communications, making available trained emergency response personnel, emergency response equipments and supplies, scientific and technical expertise and humanitarian assistance.

3. Where an emergency poses a threat to vital human needs, aquifer States, notwithstanding draft articles 4 and 6, may take measures that are strictly necessary to meet such needs.

Article 17

Protection in time of armed conflict

Transboundary aquifers or aquifer systems and related installations, facilities and other works shall enjoy the protection accorded by the principles and rules of international law applicable in international and non-international armed conflicts and shall not be used in violation of those principles and rules.

Article 18

Data and information concerning national defence or security

Nothing in the present draft articles obliges a State to provide data or information the confidentiality of which is essential to its national defence or security. Nevertheless, that State shall cooperate in good faith with other States with a view to providing as much information as possible under the circumstances.

Article 19

Bilateral and regional agreements and arrangements

For the purpose of managing a particular transboundary aquifer or aquifer system, aquifer States are encouraged to enter into a bilateral or regional agreement or arrangement among themselves. Such agreement or arrangement may be entered into with respect to an entire aquifer or aquifer system or any part thereof or a particular project, programme or utilization except insofar as the agreement or arrangement adversely affects, to a significant extent, the utilization, by one or more other aquifer States of the water in that aquifer or aquifer system, without their express consent.

Article 20

Relation to other conventions and international agreements

1. The present draft articles shall not alter the rights and obligations of the States parties which arise from other conventions and international agreements compatible with the present draft articles and which do not affect the enjoyment by other States parties of their rights or the performance of their obligations under the present draft articles.

2. Notwithstanding the provisions of paragraph 1, when the States parties to the present draft articles are parties also to the Convention on the Law of the Non-navigational Uses of International Watercourses, the provisions of the latter concerning transboundary aquifers or aquifer systems apply only to the extent that they are compatible with those of the present draft articles.